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**From:** George Allen [gallen@nescaum.org]  
**Sent:** 11/17/2020 2:30:54 PM  
**To:** Johnson, Steffan [johnson.steffan@epa.gov]  
**CC:** lrector@nescaum.org  
**Subject:** RE: history of astm 2515 30 ft. length limit?

Hi Stef - thanks. If by head-space you mean the height of the lab, a longer horizontal mixing section wouldn't add to lab height. That's why I'm thinking some other rationale. It's not essential to find out why, but that'd be useful if we [very likely] end up needing to go > 30 ft to ensure mixing while minimizing/eliminating the need for baffle/mesh/flow straighteners in the flow path.

George

At 09:24 AM 11/17/2020, Johnson, Steffan wrote:  
George,

I have zero information on the background for any of the wood heater NSPS ASTM methods. It is very unlikely that there are supporting documents for this design criteria, but I'll ask Ray Merrill, our MTG staff liaison with ASTM (he has access to the files at ASTM).

I'll also do a bit of a dive here to see if I can find such criteria to support 5G design...there may be more to be found on that front than with ASTM.

My guess is that it was a decision based on laboratory head-space, but I'll see if we can find anything.

Stef

-----Original Message-----

From: George Allen <gallen@nescaum.org>  
Sent: Tuesday, November 17, 2020 9:04 AM  
To: Johnson, Steffan <johnson.steffan@epa.gov>  
Cc: lrector@nescaum.org  
Subject: history of astm 2515 30 ft. length limit?

Stef - do you know where the 30 ft. astm tunnel length limit came from? Was it an attempt to minimize surface area and particle loss in the tunnel? I suspect a tunnel designed for 500+ CFM will need > 30 ft; we'd probably have to use 15" diameter for the entire run to have a chance at mixing without some kind of obstruction to enhance mixing, and that likely breaks the 30 ft limit since it makes the 8 diameters become 10 ft.

I think we could do a tunnel version that is astm compliant other than the 30 ft limit and using something other than pitot tubes for velocity traverses. Not sure it would solve the problem, but if it doesn't then some kind of mixing obstruction will be necessary.

thanks - George